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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/072,340	02/06/2002	John A. Hey	CN01383K	4276

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PATENT DEPARTMENT (K-6-1, 1990)
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EXAMINER	
HUI, SAN MING R	

ART UNIT	PAPER NUMBER
1617	

DATE MAILED: 05/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/072,340	HEY ET AL.	
	Examiner	Art Unit	
	San-ming Hui	1617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2,14 and 15* is/are pending in the application.

4a) Of the above claim(s) *15* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2 and 14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Applicant's amendments filed February 25, 2004 have been entered. The cancellation of claims 1, 3-13, and 16 is acknowledged.

Claims 2, 14, and 15 are pending.

Claim15 is withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 4.

The rejection under 35 USC 112 set forth in the previous office action have been withdrawn in view of the amendments filed February 25, 2004.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 2 and 14 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for Alzheimer's disease, does not reasonably provide enablement for cognition deficit disorders. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. In the instant case, the specification fails to provide information to one of skilled in the art to practice the full scope of the instant invention without undue experimentation.

The claims are so broad that they encompass any disorders that will decrease or reduce cognition function of a patient. It is known in the art that the term "cognition deficit disorders" includes mild cognitive impairment, acute confusional states, amnesia, various kinds of dementia (e.g., age-related dementia, vascular dementia, Pick's disease, acute traumatic dementia associated with head injury, neoplasia related dementia, Parkinson's disease, multiple sclerosis related, and endocrine related, etc.). These disorders have different causes. Depending on the disorders, different agents would be employed to treat these disorders. Thus, employing the small number of compounds, such as herein claimed, to treat all of the cognition deficit disorders encompassed by the claims would seem to be very unlikely and unpredictable. The instant specification fails to provide sufficient information to one of skilled in the art to employ the herein recited compounds for the treatment of all cognition deficit disorders, except for the treatment of Alzheimer's disease. There is no working example directed to the other kinds of cognition deficit disorders except Alzheimer's disease. Absent providing sufficient guidance in the instant specification, one of skilled in the art would have to perform undue experimentation to practice the full scope of the instant invention.

Claim 14 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for donepezil, heptylphysostigmine, tacrine, rivastigmine, and galantamine, does not reasonably provide enablement for other acetylcholinesterase inhibitors. The specification does not enable any person skilled in

the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. In the instant case, the specification fails to provide information to one of skilled in the art to practice the full scope of the instant invention without undue experimentation.

The instant specification fails to provide information that would allow the skilled artisan to practice the instant invention without undue experimentation. Attention is directed to *In re Wands*, 8 USPQ2d 1400 (CAFC 1988) at 1404 where the court set forth the eight factors to consider when assessing if a disclosure would have required undue experimentation. Citing *Ex parte Forman*, 230 USPQ 546 (BdApls 1986) at 547 the court recited eight factors:

1) the quantity of experimentation necessary,

2) the amount of direction or guidance provided,

3) the presence of absence of working examples,

4) the nature of the invention,

5) the state of the prior art,

6) the relative skill of those in the art

7) the predictability of the art, and

8) the breadth of the claims.

Applicant fails to set forth the criteria that define a "acetylcholinesterase inhibitors". Additionally, Applicant fails to provide information allowing the skilled artisan to ascertain these compounds without undue experimentation. In the instant case, only a limited number of "acetylcholinesterase inhibitors" examples are set forth, thereby

failing to provide sufficient working examples. It is noted that these examples are neither exhaustive, nor define the class of compounds required. Without sufficient guidance and information, one of skilled in the art would be required to assess each embodiment individually for physiological activity. The instant claims read on all " acetylcholinesterase inhibitor(s)", necessitating an exhaustive search for the embodiments suitable to practice the claimed invention. Applicants fail to provide information sufficient to practice the claimed invention, absent undue experimentation.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lowe et al. (US Patent 5,883,096).

Lowe et al. teaches a method of employing Di-N-substituted piperadine compound, including compound 5 on page 3 of the instant specification as the preferred compound (when R is benzo[1,3]dioxolyl, X is SO_2, R^1 and R^{21} together form an oxo group, R^2 is a piperadine group with R^3 is H,and R^{29} is *t*-butoxycarbonyl), to treat cognition disorder and Alzheimer's disease (See the abstract and col. 6, line 25 to 64).

Lowe et al. does not expressly teach the method of treating cognition deficit by employing compound 5 specifically.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ specifically compound 5 to treat cognition deficit.

One of ordinary skill in the art would have been motivated to employ specifically compound 5 to treat cognition deficit. It is known that all of the compounds of Lowe et al. are useful to treat Alzheimer's disease and cognition disorder. Employing any preferred compounds of Lowe, such as compound 5, in the method of treating cognition deficit such as Alzheimer's disease would be reasonably expected to be effective.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lowe et al. as applied to claims 1 and 2 above, and further in view of Drug Facts and Comparisons (1999 edition, page 1731).

Lowe et al. suggests the method of employing compound 5 in a method of treating cognition deficit disorders such as Alzheimer's disease.

Lowe et al. does not expressly teach the combination of tacrine and compound 5 in a method of treating cognition deficit disorders.

Drug Facts and Comparisons teaches tacrine as useful in treating Alzheimer's disease (see page 1731).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the combination of tacrine and compound 5 in a method of treating cognition deficit disorders.

One of ordinary skill in the art would have been motivated to employ the combination of tacrine and compound 5 in a method of treating cognition deficit disorders. It is known in the art that both tacrine and compound 5 are known to be useful as treatment of Alzheimer's disease individually. Employing both agents concomitantly for treating the very same disorder (i.e., alzheimer's disease) would be obvious (See *In re Kerkhoven* 205 USPQ 1069).

Response to Arguments

Applicant's arguments filed February 25, 2004 averring the additional histamine H3 antagonistic activity possessed by the herein claimed compounds have been

considered, but are not found persuasive. The issue at hand is that whether one of ordinary skill in the art would have employed the herein claimed compounds for the treatment of cognition deficit disorders as claimed. Possessing the teachings of the cited prior art, one of ordinary skill in the art would have been motivated to employ the herein claimed piperidine compounds to treat cognition deficit disorders, regardless of the mechanism might be. Moreover, products of identical chemical composition can not have mutually exclusive properties. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present (See *In re Spada* 15 USPQ2d 1655, 1658 (Fed. Cir. 1990) and MPEP 2112.01). Furthermore, Examiner notes that the instant claims are directed to a method of treating cognition deficit disorders, not a method of antagonizing histamine 3 receptor. Therefore, the claims are still rendered obvious by the cited prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to San-ming Hui whose telephone number is (703) 305-1002. The examiner can normally be reached on Mon 9:00 to 1:00, Tu - Fri from 9:00 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreeni Padmanabhan, PhD., can be reached on (571) 272-0629. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

San-ming Hui
Patent Examiner
Art Unit 1617